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June 2.

SIR ASTLEY COOPER, Bart. V.P., in the Chair.

A paper was read, "On the Caves and Fissures in the Western District of the Mendip Hills." By the Rev. David Williams, A.M. F.G.S., Rector of the parishes of Bleadon and Kingston-Seamoor, in the County of Somerset. Communicated by Davies Gilbert, Esq. V.P.R.S.

The first cavern described in this paper is situated at Uphill, at the very western extremity of the Mendip Hills. Its present entrance is about midway in a mural face of transition limestone, about a hundred feet high. The fissure leading into it is nearly vertical, and was discovered by some quarry-men casually intersecting it. Some bones and teeth being found there, the author was induced to pursue the exploration of the fissure; in the course of which he discovered bones of the rhinoceros, hyæna, bear, ox, horse, hog, fox, polecat, rat and mouse, and also of birds. The bones of the animals of the larger species were so gnawed and splintered, and evidently of such ancient fracture, that no doubt could exist of the cave having been a hyæna's den, similar to Kirkdale and Kent's Hole. All the ancient remains were found in the upper regions of the fissure, and were so firmly imbedded in the detritus, as not to be extracted without difficulty with the pick-axe. Further on he found a wet tenacious loam, abounding with an innumerable quantity of bones, belonging exclusively to birds. After working six days he came to a cavern, ten or twelve feet high, extending about forty feet from north to south, and varying from eight to twenty feet from east to west; the floor of which was covered with bones of sheep: and on digging into the mud and sand of which it consisted, the bones of sheep, birds, cuttle-fish, and foxes, were discovered. Some fine stalactites depended from the roof, and partial spots of stalagmite appeared on the floor. In a fissure that branched from the mouth of the main entrance there were found, among the sand, a piece of black Roman pottery, and two coins, one of Didius Julianus, and the other of Julia Mammæa, together with bones of sheep, cuttle-fish, foxes, and birds.

The author considers that there exist evidences of the operation of water at three distinct periods of time:—the first indicated by

the bones of the hyæna, and the other gnawed bones firmly imbedded in the diluvial detritus : the second, when sand was deposited by the sea in the second fissure, that washed in through the vertical chimney, and that inundated the whole valley up to Glastonbury : the third irruption of the sea occurring within these fifteen hundred years, and choking up the adit from the level by which the sheep and foxes had entered, floating in the bones of the cuttle-fish, and depositing the thin crust of mud which covered the sand. The coins and pottery he supposes to have been introduced through this entrance from the level.

The author next gives an account of the Hutton caverns, situated on the northern escarpment of the range, commonly called Bleadon Hill. This cavern had been discovered some time ago and noticed by Mr. Catcott in his "Treatise on the Deluge :" but afterwards it became inaccessible by the falling in of the roof and sides. The author, led by some indications of pieces of ancient bones in the rubbish of some old pits, sought for this cavern by sinking a shaft, and succeeded in opening into it. The chambers he reached are probably the western extremity of a very extensive range of caverns, occurring in a region bearing marks of great disturbance, abounding in chasms and fissures, and containing a great number of bones. The principal of those discovered belong to the elephant, tiger, hyæna, wolf, boar, horse, fox, hare, rabbit, rat, mouse, and bird. No trace of the bones of the ox were discovered here, although in the cave at Banwell Hill, about a mile distant, they abound ; while, on the other hand, no vestige of the horse is met with.

Among the remarkable specimens found in the Hutton caverns were the milk-teeth and other remains of a calf elephant about two years old, and those of a young tiger just shedding its milk-teeth ; and also the molares of a young horse that were casting their coronary surfaces ;—the remains of two hyænas of the extinct species ; and two or three balls of album græcum.

The Banwell caves, lying about a mile to the east of Hutton, are next described. They are the property of the present Bishop of Bath and Wells ; and contain remains of the bear, wolf, fox, deer, and ox. Of the bear there are at least two species ; one of which appears to be the *Ursus spelæus* of Blumenbach, and must have been an animal of immense size and strength. These remains were, in general, not associated according to the animals they belonged to, but indiscriminately dispersed : thus the head of a bear lay by the femur of an ox, and the jaw of a wolf lay by the antler of a deer. Hence the author infers that these bones, after accumulating for ages, were carried in by a tumultuous rush of waters, and mingled together before their final deposition. He concludes that the several animals whose remains are deposited in the Banwell and Burlington caves belonged to a very different age and period from those found at Hutton and Uphill.

An account is also given of two caves at Burrington Coomb, lying about six miles to the east of Banwell, in one of which, though

similar in appearance to the caves already described, no antediluvian remains of animals have been found. Several human skeletons, and flint knives and celts, were discovered there by Mr. Williams ; from which it has been inferred that it had formerly been used as a burying-ground. In the upper caverns, remains of the bear, elk and polecat, were discovered ; the two former evidently of the extinct species.